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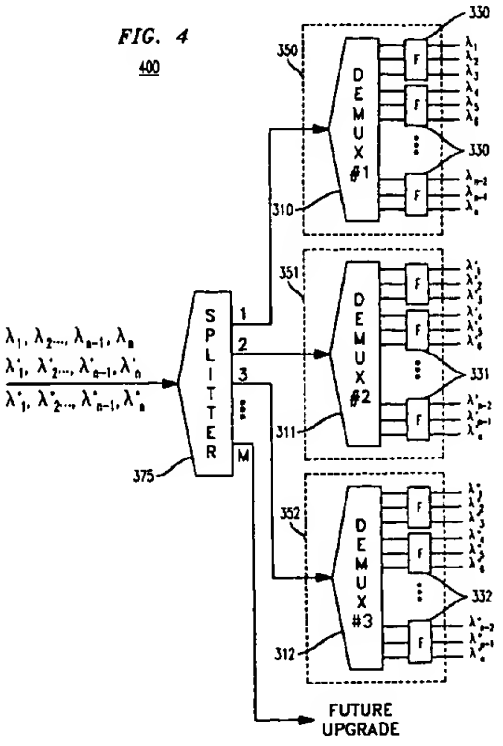
(54) Scalable optical demultiplexing arrangement for wide band dense wavelength division multiplexed systems

(57) Substantial reduction in crosstalk and improved scalability for supporting high channel counts in dense wavelength division multiplexed (DWDM) systems is achieved in an optical demultiplexer arrangement that partitions the total number of input optical channels into separate demultiplexer modules, demultiplexes smaller groups of optical channels in the separate demultiplexer modules, and filters the individual optical channels at the outputs of the separate demultiplexer modules. Partitioning the total number of channels into smaller demultiplexing groups and post-filtering a reduced number of demultipexed optical channels reduces the number of non-adjacent channels that can contribute to the total crosstalk level. The modularity of the optical demultiplexer arrangement results in smaller device footprints and smaller free spectral ranges associated with the demultiplexer modules. This modularity also allows for future system upgrades without redesign and without disruption to existing service. In one illustrative embodiment, the optical demultiplexer arrangement includes a splitter or filter for directing the multi-wavelength input optical signal to one or more demultiplexer modules. Each of the demultiplexer modules separates a received multi-wavelength optical signal into individual wavelength channels. The individual wavelength channels are then supplied to bandpass post-filters which are coupled to each of the outputs of the demultiplexer modules.

FIG. 4



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